

Amendments to the Claims:

1. (Currently Amended) An apparatus for smoothly playing a ~~pre-determined~~ predetermined sequence of streamed content segments ~~songs transmitted from a server over the Internet~~, the apparatus comprising;

a processor;

a first memory that stores at least one control program ~~used by~~ usable by the processor to control the ~~playing~~ play of the predetermined sequence of ~~songs~~ content segments, the at least one control program including computer-readable instructions specifying a number of beginning portions of ~~songs~~ content segments to cache in advance and size of a pre-buffer cache; and

a second memory which is available to the at least one control program, wherein the ~~at least one control program causes the processor at least~~ apparatus is configured to:

~~as a song starts to play, start to download~~, in response to initiation of play of a content segment, initiate downloading to the pre-buffer cache of a beginning portion of each of a number of songs content segments which are, in the ~~pre-determined~~ predetermined sequence, subsequent to the playing song, ~~to the pre-buffer cache content segment~~, wherein the pre-buffer cache is an area of the second memory;

~~if playback is skipped to a target song for which the~~ in response to skipping to a target content segment of the predetermined sequence of content segments whose beginning portion has been downloaded to the pre-buffer cache, start to initiate play of the downloaded beginning portion of the target song target content segment if less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber; and

~~while playing the downloaded beginning portion of the target song, start to download~~ content segment, initiate downloading of the rest of the target song target content segment.

2. (Currently Amended) The apparatus of claim 1, wherein the beginning portion of the ~~target song~~ target content segment is approximately the data of the first ten seconds of the ~~target song~~ target content segment.

3. (Currently Amended) The apparatus of claim 1, wherein the number of beginning portions of ~~songs~~ content segments to cache in advance is five.

4. (Currently Amended) The apparatus of claim 1, wherein the number of beginning portions of ~~songs~~ content segments to cache in advance is all ~~songs~~ content segments in the ~~pre-determined~~ predetermined sequence of ~~songs~~ content segments that are subsequent to the ~~playing song~~ playing content segment.

5. (Previously Presented) The apparatus of claim 1, wherein the pre-buffer cache follows a first-in first-out algorithm and allows writing while reading.

6. (Currently Amended) A method for smoothly playing a ~~pre-determined~~ predetermined sequence of streamed content segments ~~songs~~ transmitted from a remote server to a local playback device over the Internet, comprising:

~~as a song starts in response to initiation of play of a content segment on the local~~
a local playback device, downloading, consecutively, a beginning portion of each of a number of ~~songs~~ content segments which are, in the ~~pre-determined~~ predetermined sequence, subsequent to the ~~playing song~~ playing content segment, wherein the initiation of play of the content segment is based on whether less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber; and

pre-caching the downloaded beginning portions to a pre-buffer cache of a memory of the local playback device, wherein the number of beginning portions of ~~songs~~ content segments to pre-cache in advance and size of the pre-buffer cache are specified by a function call.

7. (Currently Amended) The method of claim 6, further comprising:

~~if playback is skipped from a playing song to a target song, in response to skipping to a target content segment of the predetermined sequence of content segments, checking whether the beginning portion or the target song-target content segment is in the pre-buffer cache; and~~

~~if the beginning portion of the target song-target content segment is in the pre-buffer cache, playing the beginning portion of the target song-target content segment from the pre-buffer cache, downloading at least a portion of the song-the content segment which is not in the pre-buffer cache, and deleting beginning portions of any content segments songs prior to the target song-target content segment in the pre-determined-predetermined sequence from the pre-buffer cache.~~

8. (Currently Amended) The method of claim 7, further comprising:

~~if the beginning portion of the target song-target content segment is in the pre-buffer cache, downloading, consecutively, a beginning portion of each of a number of songs-content segments which are in the pre-determined-predetermined sequence, subsequent to the target song-target content segment, wherein if beginning portions of the one or more songs-content segments subsequent to the target song-target content segment are already in the pre-buffer cache, skipping the downloading the beginning portions of the one or more songs-content segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent songs, consecutively, to make up the number of content segments such that beginning portions of songs each of the number of content segments to pre-cache in advance are downloaded to the pre-buffer cache.~~

9. (Currently Amended) The method of claim 8, further comprising:

~~if no skip command is received while the target song-target content segment is playing, as the playing of the target song-target content segment ends, playing the song the content segment immediately subsequent to the target song-target content segment;~~

and

if a skip command is received while the ~~target-song~~ target content segment is playing, checking whether the beginning portion of the ~~song~~ the content segment immediately subsequent to the ~~target-song~~ target content segment is in the pre-buffer cache.

10. (Currently Amended) The method of claim 7, wherein if the beginning portion of the ~~target-song~~ target content segment is not in the pre-buffer cache, the method further comprises:

sending a request to stop transmitting the ~~playing-song~~ playing content segment and to start transmitting the ~~target-song~~ target content segment and at least substantially simultaneously;

deleting the beginning portion of ~~any-song~~ any content segment which is prior to the ~~target-song~~ target content segment in the ~~pre-determined~~ predetermined sequence of ~~songs~~ content segments from the pre-buffer cache;

downloading at least a remaining portion of the ~~target-song~~ target content segment; and

begin playing the ~~target-song~~ as target content segment when a sufficient portion of the ~~target-song~~ target content segment has been downloaded.

11. (Currently Amended) The method of claim 10, further comprising:

if playback is skipped from the ~~target-song~~ target content segment to another ~~target-song~~ target content segment, checking whether the beginning portion of the other ~~target-song~~ target content segment is in the pre-buffer cache; and

if playback is not skipped from the ~~target-song~~ target content segment, playing the beginning portion of the ~~song~~ content segment subsequent to the ~~target-song~~ target content segment after the end of the ~~target-song~~ target content segment is played and downloading at least a portion of the ~~target-song~~ target content segment which is not in the pre-buffer cache, wherein if beginning portions of the one or more ~~songs~~ content segments subsequent to ~~songs~~ content segments in the ~~pre-determined~~ predetermined sequence of ~~songs~~ content segments are already in the pre-buffer cache, skipping the

downloading of the beginning portions of the one or more ~~songs~~ content segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent ~~songs~~, ~~consecutively~~, ~~to make up the number of~~ content segments such that beginning portions of songs ~~each of the number of content segments to pre-cache in advance~~ are downloaded to the pre-buffer cache.

12. (Currently Amended) The method of claim 6, wherein the beginning portion of the ~~target song~~ target content segment is approximately the data of the first ten seconds of the ~~target song~~ target content segment.

13. (Currently Amended) The method of claim 6, wherein the number of beginning portions of ~~songs~~ content segments to cache in advance is five.

14. (Currently Amended) The method of claim 6, wherein the number of beginning portions of ~~songs~~ content segments to cache in advance is all ~~songs~~ content segments in the ~~pre-determined~~ predetermined sequence of ~~sense~~ content segments that are subsequent to the ~~playing song~~ playing content segment.

15. (Previously Presented) The method of claim 6, wherein the pre-buffer cache follows a first-in first-out algorithm and allows writing while reading.

16. (Currently Amended) A ~~program~~ computer-readable storage medium readable by a computer, tangibly embodying a program of ~~having~~ instructions executable by the computer to perform a method for smoothly playing stored thereon that, if executed by a computing device, cause the computing device to perform operations which play a pre-determined ~~predetermined~~ sequence of ~~songs~~ transmitted from a remote server to the computer over the Internet streamed content segments, the operations comprising:

as a song starts in response to initiation of play of a content segment on the computer computing device, downloading a beginning portion of each of a number of

~~songs-content segments~~ which are, in the ~~pre-determined~~ predetermined sequence, subsequent to the ~~playing-song~~ playing content segment, wherein the initiation of play of the content segment is based on whether less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber; and

pre-caching the downloaded beginning portions to a pre-buffer cache of a memory of the ~~local-playback-computing~~ device, wherein the number of beginning portions of ~~songs-content segments~~ to pre-cache in advance and size of the pre-buffer cache are specified by a function call.

17. (Currently Amended) The ~~program-computer-readable~~ storage medium of claim 16, wherein the operations further-comprising comprise:

~~If playback is skipped from a playing-song to a target-song, in response to skipping to a target content segment of the predetermined sequence of content segments, checking whether the beginning portion of the target-song-target content segment is in the pre-buffer cache; and~~

If the beginning portion of the ~~target-song-target content segment~~ is in the pre-buffer cache, playing the beginning portion of the ~~target-song-target content segment~~ from the pre-buffer cache, downloading at least a portion of the ~~target-song-target content segment~~ which is not in the pre-buffer cache, and deleting beginning portions of any ~~songs-content segments~~ prior to the ~~target-song-target content segment~~ in the ~~pre-determined~~ predetermined sequence from the pre-buffer cache.

18. (Currently Amended) The ~~program-computer-readable~~ storage medium of claim 17, wherein the operations further-comprising comprise:

if the beginning portion of the ~~target-song-target content segment~~ is in the pre-buffer cache, downloading a beginning portion each a numbers of ~~songs-content segments~~ which are, in the ~~pre-determined~~ predetermined sequence, subsequent to the ~~target-song-target content segment~~, wherein if beginning portions of the one or more ~~songs-content segments~~ subsequent to the ~~target-song-target content segment~~ are

already in the pre-buffer cache, skipping the downloading of the beginning portions of the one or more ~~songs~~ content segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent ~~songs~~, ~~consecutively, to make up the number of~~ content segments such that beginning portions of ~~songs~~ each of the number of content segments to pre-cache in advance are downloaded to the pre-buffer cache.

19. (Currently Amended) The ~~program~~ computer-readable storage medium of claim 18, wherein the operations further comprising comprise:

if no skip command is received while the ~~target song~~ target content segment is playing, as the playing of the ~~target song~~ target content segment ends, playing the ~~song~~ the content segment immediately subsequent to the ~~target song~~ target content segment; and

if a skip command is received while the ~~target song~~ target content segment is playing, checking whether the beginning portion of the ~~song~~ the content segment immediately subsequent the ~~target song~~ target content segment is in the pre-buffer cache.

20. (Currently Amended) The ~~program~~ computer-readable storage medium of claim 17, wherein if the beginning portion of the ~~target song~~ target content segment is not in the pre-buffer cache, the ~~method~~ operations ~~further comprises~~ comprise:

sending a request to stop transmitting the ~~playing song~~ playing content segment and to start transmitting the ~~target song~~ target content segment, and at least substantially simultaneously;

deleting the beginning portion of ~~any song~~ any content segment which is prior to the ~~target song~~ target content segment in the ~~pre-determined~~ predetermined sequence of ~~songs~~ content segments from the ~~pre-buffer cache, and~~ cache;

downloading at least a remaining portion of the ~~target song~~ target content segment; and

begin playing the ~~target-song-as~~ target content segment after a sufficient portion of the ~~target-song~~ target content segment has been downloaded.

21. (Currently Amended) The ~~program-computer-readable~~ storage medium of claim 20, further ~~comprising~~ comprise:

If playback is skipped from the ~~target-song~~ target content segment to another ~~target-song~~ target content segment, checking whether the beginning portion of the other ~~target-song~~ target content segment is in the pre-buffer cache; and

if playback is not skipped from the ~~target-song~~ target content segment, playing the beginning portion of the ~~song-the~~ content segment subsequent to the ~~target-song~~ target content segment after the end of the ~~target-song~~ target content segment is played, downloading at least a portion of the ~~target-song~~ target content segment which is not in the pre-buffer cache, wherein if beginning portions of the one or more ~~songs~~ content segments subsequent to ~~songs-content~~ segments in the ~~pre-determined~~ predetermined sequence are already in the pre-buffer cache, skipping the downloading of the beginning portions of one or more ~~songs-content~~ segments already having beginning portions in the pre-buffer cache and downloading the beginning portions of the subsequent ~~songs-to make up the number of~~ content segments such that beginning portions of ~~songs-each of the number of~~ content segments to cache in advance are downloaded to the pre-buffer cache.

22. (Currently Amended) The ~~program-computer-readable~~ storage medium of claim 16, wherein the beginning portion of the ~~target-song~~ target content segment is approximately the data of the first ten seconds of the ~~target-song~~ target content segment.

23. (Currently Amended) The ~~program-computer-readable~~ storage medium of claim 16, wherein the number of beginning portions of ~~songs-content~~ segments to cache in advance is five.

24. (Currently Amended) The ~~program~~computer-readable storage medium of claim 16, wherein the number of beginning portions of ~~songs~~content segments to cache in advance is all ~~songs~~content segments in the ~~pre-determined~~predetermined sequence of ~~songs~~content segments that are subsequent to the ~~playing-song~~playing content segment.

25. (Currently Amended) The ~~program~~computer-readable storage medium of claim 16, wherein the pre-buffer cache follows a first-in first-out algorithm and allows writing while reading.

26. (Currently Amended) An apparatus for smoothly playing a ~~pre-determined~~predetermined sequence of ~~songs~~content segments transmitted from a server over the Internet streamed content segments, comprising:

means for controlling the playback of a ~~pre-determined~~predetermined sequence of ~~songs~~content segments based on whether less than a preallocated quantity of content segments were previously streamed, during a subscription period, in association with a subscriber;

means for pre-downloading a beginning portion of a number of ~~songs~~content segments from the ~~pre-determined~~predetermined sequence of ~~songs~~content segments; and

means for caching the pre-downloaded beginning portions, wherein the number of beginning portions to be pre-downloaded is configurable via a function call.